

REMARKS

Claims 2-6 and 14-20 are currently pending in the present patent application, with claims 1 and 7-13 having been cancelled through the above claim amendments.

In an Office Action mailed November 2, 2004, the Examiner rejected claims 1, 2, 4-8, 10-15, and 17-20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. US 2004/0029335 A1 to Lee *et al.* ("Lee"). The Examiner further rejected claim 3 as being unpatentable under 35 U.S.C. §103(a) over Lee in view of U.S. Patent No. 5,753,953 to Fukumoto ("Fukumoto"). Claims 9 and 16 were objected to as being dependent upon a rejected based claim but indicated as allowable if rewritten in independent form.

Amended claim 3 recites a single cell erasing method for recovering memory cells under reading or programming disturbs, in non volatile semiconductor memory electronic devices including a cell matrix split in sectors and organized in rows, or word line, and columns, or bit lines, of the type providing the application of a sector erasing algorithm with subsequent testing phase (erase-verify). The method provides a bit by bit erasing by applying to each single word line a negative voltage used during the erasing of a whole sector and on the drain terminal of each single cell a programming voltage. The method further provides a bias to a negative voltage value of the cell substrate or of the cell bulk terminal to increase a drain junction bias and enhance impact ionization at a drain junction in order to accelerate the generation of hot holes to be injected into a floating gate.

With regard to the method providing a bias to a negative voltage value of the cell substrate or of the cell bulk terminal, the Examiner states that Fukumoto discloses such a biasing and points to Figures 19 and 20 and column 15, lines 40-41 and 63-64. Amended claim 3 recites that providing the negative bias voltage to the cell substrate increases a drain junction bias and enhances impact ionization at a drain junction of the cell in order to accelerate the generation of hot holes to be injected into a floating gate of the cell. The structure and process disclosed and suggested in Fukumoto utilizes an entirely different technique. More specifically, in Fukumoto the substrate biasing is used to increase the biasing of the tunnel oxide so

as to enhance Fowler Nordheim tunneling of the electron flow toward the floating gate.

For these reasons, the combination of elements in amended claim 3 is neither disclosed nor suggested by Lee and Fukumoto and therefore allowable. Dependent claims 2 and 4-6 ultimately depend from claim 3 and are therefore allowable for the same reasons as claim 3 and due to the additional limitations added by these claims.

Amended claim 15 recites, in part, a flash memory device that is operable to bias at a negative voltage value a cell substrate or of the cell bulk terminal to increase a drain junction bias and enhance impact ionization at a drain junction in order to accelerate the generation of hot holes to be injected into a floating gate. As set forth above with regard to claim 3, Fukumoto neither discloses nor suggests such application of a negative bias voltage to a cell substrate but instead discloses biasing that increases the biasing of the tunnel oxide so as to enhance Fowler Nordheim tunneling of the electron flow toward the floating gate. Accordingly, the combination of elements recited in amended claim 15 is allowable and dependent claims 14 and 16 are allowable for at least the same reasons as claim 15 and due to the additional limitations added by these claims.

Amended independent claim 17 recites, in part, an electronic system including a flash memory device that is operable to bias at a negative voltage value a cell substrate or of the cell bulk terminal to increase a drain junction bias and enhance impact ionization at a drain junction in order to accelerate the generation of hot holes to be injected into a floating gate. As set forth above with regard to claims 3 and 15, Fukumoto discloses biasing that increases the biasing of the tunnel oxide so as to enhance Fowler Nordheim tunneling of the electron flow toward the floating gate. The combination of elements recited in amended claim 17 is therefore allowable and dependent claims 18-20 are allowable for at least the same reasons as claim 17 and due to the additional limitations added by these claims.

The present patent application is in condition for allowance. Favorable consideration and a Notice of Allowance are respectfully requested. Should the Examiner have any further questions about the application, Applicant respectfully requests the Examiner to contact the undersigned attorney at (425) 455-5575 to

resolve the matter. If any need for any additional fee is found, for any reason or at any point during the prosecution of this application, kindly consider this a petition therefore and charge any necessary fees to deposit account 07-1897.

Respectfully submitted,

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